

Stakeholder Participation in Water Resource Management: Drop of Life

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ABSTRACT

Water resources are threatened both nationally and globally due to anthropogenic activities. This puts at risk the realization of the United Nations' Sustainable Development Goals. It is for this reason that sustainable water resource management forms part of the key global development concerns. The present study sought the participation of community as well as stakeholders in management in Kipkelion West Sub-County within Kericho County in Kenya. Descriptive research design was used in this study. The study population comprised of households and water management agencies within Kipkelion West Sub-County. About 394 households were randomly sampled for the study while purposive sampling technique was used in selecting 10 key informants for interviews. The study area was in Kipkelion West Sub-County within Kericho County in Kenya. Household questionnaires and interview guides were used in the data collection. Although the use of water resources was found to be communal in nature, the management was left in the hands of the resource owners and water other water resources management stakeholders. The main stakeholders in the water resource management in the study area were found to be the County Government of Kericho, Water Resources Authority (WRA) and Kericho Water and Sanitation Company (KEWASCO). These stakeholders were found to be working consultatively to manage the water resources in Kipkelion West Sub-County.

INTRODUCTION

Water is one of the most important resources that the environment has to offer (IWMI, 2007). Most of the biological processes in the environment are dependent on water. Human livelihood is also highly dependent on water. Water can be used for drinking, cooking, farming, transport, cleaning and several other activities. Without it, life on earth would stop to exist. Over 50% of the body of most animals contains water. Water is used for cellular activities, excretion, maintaining a healthy appearance, nutrients transport and so much more importance. Realizing the importance of water as a resource, the United Nation instituted the UN-Water (United Nations, 2018). This became the organization tasked with all the United Nation's issues of water and sanitation that cut across the departments of the United Nations (United Nations, 2018). To realize the necessary development in Africa, there is a need to address current and future water crisis. An estimated number between 350 – 600 million people living in Africa is projected to face water crisis by 2050. Approximately one third of the

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global population are found in areas that experience water problems and the water supplies in such areas is 10% lower than the demand (Annan, 2000; Arnell, 2004).

Water conservation is a multilevel process that involves effective water management with sustainable utilization (Ullah, 2016). The goal of water conservation is to be able to harness available water and make it available for longer periods of time. Effective water conservation strategies are therefore those that ensure inter-seasonal availability of water and effective management of the available water resources (Cech, 2010). The world today is caught in a dilemma of protecting both the environment and the human health while at the same time meeting the growing demand for water and development that is driven by population growth and affected by climate variability and land use change. Sustainable water resource management includes both water availability and usability without compromising its quality.

Sustainable water resource management should meet the socio-economic and environmental needs of the society. To understand the water quantity demand, there is need to understand the geographical profile, natural and human resources, socio-economic structures, and the features of water resources in the region (Feng, 2001).

A study conducted by Beall et al. (2011) indicated that for sustainable water management, there is need to understand the water balance in each region. They further asserted that water conservation, reuse and recycling are feasible mechanisms for increasing available surface water and groundwater supplies. One of the key factors that affect water quality is land use practices. Land management programs, including hubs and corridors, working lands, and aquifer protection programs, all affect water resources and their sustainability. Land use changes can impede or contribute to sustainable water, so sustainable water resources management also must include integrated watershed management.

Local communities hold different views regarding water availability for today and future use. Others feel that there is enough water for use by all generations while others feel the need for sustainable use of water. Those that promote sustainable use of water are advocating for water conservation. Since there are divergent opinions concerning water availability, water managers and other stakeholders need to work together in sustainable water resources management strategies. It is against this background that the study seeks to determine the extent of community and other stakeholders participation and hence document the status of water management as a resource in Kipkelion West Sub-County, in Kericho County, Kenya and the need to adopt a more sustainable approach to the water management process.

Methodology

Study Area

The study location was Kipkelion West Sub-County in Kericho County, Kenya. Kericho County is in Western Kenya with its capital at Kericho Town. It is one of the Constituencies in Kericho County with approximately 98,054 persons residing in 24,512 households (KNBS & SID, 2013). Most of the water issues in the Sub-County and Kericho County as a whole is managed by the Department of Water, Environment and Natural Resources and Lake Victoria South Water Services Board officially situated in Kericho town. Below is a map of Kericho County.



Figure 1: Map of Kipkelion West Sub-County showing the four Wards of the study area
Research Design

This study employed a descriptive survey research design using both quantitative and qualitative study approaches. Descriptive study assists in describing the attitude, ideas and other personal attributes relating to a given topic under study (Wambalaba, 2009). This design was chosen for this study since it assisted the researcher in giving the details of the variables under study without manipulating the existing situations on the ground (Miima, 2014).

Sample size and Sampling Procedures

Sample design is the collective process of determining the population of interest, estimating the sample size, deciding on appropriate sampling strategy and selecting representatives from the population. In sampling design, errors arising in its procedures should be minimized as much as possible with the sampling size being selected to represent the actual population under investigation (Yogesh, 2006).

The researcher used Nausima (2000) formula to determine the sample size as follows:

$$n = \frac{N}{1 + N(e)^2}$$

Where; n = Sample size

N= total number of households and

e = is the level of precision at 5%

$$n = \frac{24512}{1 + 24512(0.05)^2} = 394. \text{ Using proportionate sampling technique, the sample distribution}$$

Household questionnaires

The questionnaires were appropriate for this study since the study targets a bigger population. The questionnaires are easy to administer and can be answered easily and quickly by the respondents.

Instrument Validity and Reliability

The researcher in validating the research instruments employed triangulation, which is the use of more than one method in data collection (questionnaires, interview schedule and observation). Triangulation was useful in showing concurrent validity of

qualitative and quantitative data (Cohen et al., 2000). This enabled the researcher to check on the content, construction of items and criterion of the research instruments. Randomization procedure that was used in selecting the study samples further assured the researcher on the validity of the instruments. This helped in eliminating biasness and thus gave all the respondents the opportunity to provide the information that truly reflected the image of the target population. The instruments were pre-tested for reliability using Cronbach's alpha (α) approach during the pilot study. In order to ascertain reliability of the research instrument, the numbers construct for each variable were expanded. An alpha value was expected to be greater than 0.7 to be accepted as reliability index as indicated by Litwin (1995).

Other stakeholders' Interview Schedule

Interviews are qualitative in-depth interviews that targets people who are widely knowledgeable concerning a given topic under investigation in this case water resource management (Avoker, 2005). The interview guide in this study targeted officers from KEWASCO, WRMA, NEMA, Sub-County Water Office and Lake Victoria South Water Service Board who are directly charged with the responsibility water resource management. The interview guide generally focused on themes related to water resource management in the area.

Data Collection Procedures

The data required to meet the objectives of this study was mainly collected using questionnaires as it provides respondent's an opportunity to give feedback significantly. Field observation was also done near water resources.

Data Analysis

Descriptive statistics in terms of frequencies, percentages, means and standard deviation (SD) to give the overall description of the opinions of the respondents was done.

Ethical Considerations

This study used human beings as respondents to questions as opposed to them being the samples themselves. This thus reduced the ethical considerations and certifications that the study required to achieve. The respondents were however notified about their right to privacy and voluntary response. There was need to acquire a research permit from the National Commission for Science, Technology and Innovation (NACOSTI).

Results and discussion

Source of water sources

Approximately 87% of the respondents had permanent sources of water for domestic use. Of the

13% whose sources were not permanent, the duration of unavailability ranged from 1 to 3 months whereas the distance to the alternative source of water ranged from 500 Meters to 3 Kilometers. In Chilchila Ward for example, the residents that depended on river Kapkures would shift to river Kimologit when Kapkures dries out. However, it hardly took 2 months for river Kapkures to be available again for water sourcing. It is also important to note that river Kimologit is a permanent source just about a kilometer away from river Kapkures.

The geographical positioning of the Wards, the infrastructure and the amenities within the Ward also seemed to influence the level of improvement done on the water sources. Therefore, Kunyak for example having a better road access showed slightly better performance in terms of water sources improvement than Chilchila that had poor road access.

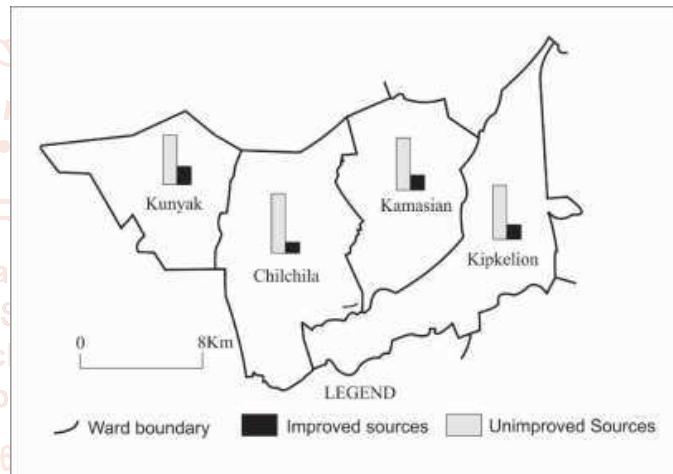


Figure 2: Kipkelion West Subcounty percentages of households with improved and unimproved sources of water

It was noted that most respondents did not see this as a challenge at first because of the conventional norms where the rural setup conditioned the dwellers to get used to the hustle involved in the acquisition of water for domestic use.

Community Involvement in Water Resource Management in Kipkelion West Sub-County

The collected data determined that about 86% of the households in Kipkelion West Sub County do not have control over the source of water that they use. Of the 14% that had control, only 8% owned the water source. This meant that water sources owned by 9% of the population were in use by the entire population. This also meant that water resources were highly communal and their management must have also followed a communal trend.

However, question 13 of the questionnaire has some interesting responses. 74% of the respondents did not think that they were part of the stakeholders required

to manage the water resources. About 12% of the respondents thought themselves as stakeholders by virtue of being associated with groups involved in conservation efforts in Kipkelion West Sub-County. Only 10% of the sampled population thought themselves as stakeholder in the water resources management process.

The 10% deeming themselves as stakeholders coincided with the 9% who owned and had direct control over the available water resources in Kipkelion West Sub-County. What this meant was that even though there were many users of water resources in the Sub-County, the management was left in the hands of the very few 9% that had direct control over the water sources. This brought about the tragedy of the commons where the resource owners had to put in extra effort to ensure the sustainability of the water resource for the benefit of the entire dependent households. Some resource owners termed their relationship with the community as a benevolent one. When asked why they do not charge for the water, the responses varied from the source having once been communal, the adjacent community having no purchasing power to sustain a consistent payment for water and the fact that most members in such communities were relatives in one way or the other.

There were instances where Community Based Organizations (CBOs) were formed to specifically manage the environment and water resources in their respective locations. In Chilchila Ward for example there was a volunteer group called the Public Health Community Volunteers (PHCV) whose members not only took care of the sanitation in the Ward, but also the quality of the water resources in the Ward. Friends of Londiani was another such group with interest in water resources management.

The level of community involvement in water resource management is usually occasional and organizational. Occasional in the sense that it is not a continuous process. It usually happens during internationally recognized days like the United Nations' world wetlands day, world environmental day, world health day and most importantly, world water day. The community involvement is organizational on the other hand in the sense that there must be some originating effort for the involvement to be achieved. Some of the originating points of effort include community-based organization, volunteer groups, Non-governmental Organizations and Governmental Organization.

The data collected established that over 80% of the members of the communities in Kipkelion West Sub-County believe that the management of water resources in the Sub-County is purely the

responsibility of the government. Their argument for this thought pattern was either because they felt they did not have the relevant capacity or that they were clearly entitled to demand the government to take care of the resources by virtue of them being taxpayers.

The community involvement water resources management in Kipkelion West Sub-County is therefore at below 20% and mostly happens occasionally through mobilize initiation by stakeholders and is hardly sustainable in most of the cases.

Stakeholder Approach Mechanism Use in The Water Resource Management Strategies

To determine whether the stakeholder approach mechanism was used in the management of water resources in Kipkelion West Sub-County, the stakeholders had to be first of all determined. The main stakeholders that were identified for the Sub-County were KEWASCO, WRA (former WARMA) and the County Government of Kericho.

Kericho Water and Sanitation Company Limited

KEWASCO is the abbreviation for the Kericho Water and Sanitation Company Limited. This a Private Limited Company completely owned by the County Government of Kericho where Kipkelion West Sub-County resides. Initially, the company that used to be responsible for water supply and billing most parts of Kipkelion West Sub-County was called Tililbei Water and Sanitation Company Limited (TILWASCO). This company was officially clustered into KEWASCO in Novemebr 2018. TILWASCO scheme used to control nine schemes that included Kipkelion, Londiani and Fort Ternan. This merger extended the reach of KEWASCO from the initial urban and peri urban niche to the entire Kericho County. KEWASCO operates under a Managing Director who answers to a Board of eight Director drawn mostly from the County Government and stakeholders.

KEWASCO covers an area of over 2,454 kilometers squared and as of 2019, it has supplied water to an area of about 291 kilometers squared. This is a coverage less than 12% of the entire area of operation. Most part of Kipkelion West Sub-County falls within the 88% unreach area. This is especially true for Kunyak and Kamasian. This implies that KEWASCO has a long way to go before it becomes a serious stakeholder for water provision and water resource management in Kipkelion West Sub-County.

By virtue of operating as a Limited Liability Company, KEWASCO is most of the time profit

oriented. Profit orientation means that almost all the adopted projects must have either a short-term or long-term projection of profitability. It goes without saying that this nature of operation not only restricts the flexibility of KEWASCO as a water resource management stakeholder in Kipkelion West Sub-County, but also the willingness to invest in such efforts. On a positive note, KEWASCO like most Companies have Corporate Social Responsibilities. Under this umbrella, KEWASCO is usually able to sponsor sustainable water management efforts and create awareness on water management as a resource.

The County Government of Kericho

From the collected data, it was evident that Kericho County as a stakeholder was determined to ensure that there was clean water available for all the residents in the County. Most of the effort to ensure this is usually driven by the Department of Water, Environment, Energy, Forestry and Natural Resources headed by a County Executive Committee Member.

The main priority for the County as a stakeholder in the water resource management in Kipkelion West Sub-County is making sure that all the residents in the four Wards have access to a steady and clean supply of water.

It is for this reason that the mandates of the Department of Water, Environment, Energy, Forestry and Natural Resources include the implementation of policies, rules and regulations on water uses and disposal, the development of water and sanitation service infrastructure, the development of water sources to provide clean and portable water to residents and the development and implementation of water service policies and guidelines to licensed companies. So far, the County Government of Kericho has been able to achieve a lot towards the efforts to manage water resources both in the study area and Kericho County as a whole. Some of these achievements include the merger of the Kericho Water and Sanitation Company (KEWASCO) and Tililbei Water and Sanitation Company (TILWASCO) for better provision and management of water; purchasing of a drilling rig to enhance water supply, the construction of masonry tanks; laying of over 200 kilometers of pipeline; donating water tanks to public institutions; drilling and equipping of boreholes; protection of springs; de-silting of dams and pans; tree growing for watersheds conservation; improving of waste disposal within the county to reduce runoff pollution of water resources and the rehabilitation of degraded sites.

Water Resources Authority

Water Resources Authority (WRA) is a state corporation that was established in 2016 under the Water Act of 2016. The Authority initially operated since 2002 as Water Resources Management Authority (WRMA) and had existed for 12 years before it changed its name. The main mandate of WRA is to safeguard individuals right to clean water through regulations, establishment and the management of the available water resources in Kenya. The Authority focuses on sustainable use of water to benefit both the present users and future users and aligns water management with global sustainable goals. Infact, the mission of WRA is to effectively regulate and manage water resources for sustainable development with an ambitious motto for accounting for every drop.

Functions of WRA include enforcing regulations made under the Water Act of 2016; formulating and enforcing regulations about the management and use of water resources; determining and setting water use charges; regulating flood mitigation procedures and coordinating stakeholders in the process of water resource management. It can therefore be concluded that WRA is the main stakeholder in the management of water as a resource in Kenya.

The presence of WRA in Kericho is via the Lake Victoria South Catchment (LVSBA) which is the southern part of Lake Victoria basin in Kenya. LVSBA covers an area of about 31,734 kilometers squared. There is a Catchment Management Unit in Kericho County whose main focus is managing the ecology of the Basin Area.

In Kericho, WRA focuses on restoring degraded water catchment areas, promoting sustainable agriculture, mitigating water resources pollution, dealing with flood cases and mitigating the challenge of riparian land encroachment.

Stakeholders Approach in Kipkelion West Sub-County

Just like the case of community participation in the water resources management, the stakeholder approach in water resource management in the study area was occasional in frequency and coincided with important local, national and international days. The coinciding with these days therefore meant that the County Government of Kericho was the main promoter of the stakeholders' participation event.

As mentioned before, most residents in Kipkelion West Sub-County do not even consider themselves as stakeholder in water resource management activities. This becomes a huddle for other stakeholders to deal with in order to start the participation process. In fact,

question 20 of the questionnaire found out that 86% of the residence in Kipkelion West Sub-County had no idea what stakeholders' participation was. These residents purely regarded themselves as users of the resources and counted on other agencies like the County Government of Kericho, WRA and KEWASCO to initiatively manage the water resources.

There is however a consultative approach when managing the water resources in Kipkelion West Sub-County. This is brought about by the default flow of authority in the Sub-County and Kericho County as a whole. Even though WRA is a national organization, it has to work hand in hand with the County Government of Kericho to manage the water resources found in the County. KEWASCO on the other hand is fully owned by the County Government of Kericho. This means that by default, the main stakeholder in the water resource management in Kipkelion West Sub-County is the County Government of Kericho.

Conclusion

Community involvement in water resources management is usually occasional and, on information only basis when the main stakeholders intend to pass important messages to community members. Thus, there should be improved community involvement in the participatory attempt to manage the water resources in Kipkelion West Sub-County. In addition, water stakeholders should work together and come up with new and improved strategies of managing the water resources in this area.

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